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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,698	06/12/2001	Henricus Jozef Vergeest	40843-C	4316

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EXAMINER

KIANNI, KAVEH C

ART UNIT PAPER NUMBER

2883

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/880,698

Applicant(s)

VERGEEST ET AL.

Examiner

K. Cyrus Kianni

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,7,9-15,18-21, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9,11,13-15 and 18 is/are allowed.
- 6) ☒ Claim(s) 6,7,10,12,19-21,24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

- Applicant's canceling of claims 1-5, 8, 16-17, 22 and 23 stated in response/amendments submitted on November 14, 2003 and 6/1/04 is acknowledged.
- It is regretted that the previous Office action did not include claims 20 and 21 in any paragraph therein. It is also regretted that on Form PTO-326, these claims were included as claims to be allowed. The following action rectifies these inadvertent errors. Thus this action made non-final; nonetheless, the examiner notes that in the future amendments the applicant should do the amendments such changing of the numbering of claims properly by crossing out the entire claim number and adding the new numbering rather than crossing out the number to be amended partially, otherwise the amendments would be non-responsive amendments and would not be entered.

Allowable Subject Matter

1. The following is a statement of reasons for the indication of allowable subject matter: Claim 9 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious cutting said glass fiber along said path to shape a wedge on the end face of the fiber in combination with the rest of the limitations of the base claim. Claims 13-15 and 18 depend on claim 9 and therefore they are also allowed.
2. Claim 11 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious said predetermined angle being repeatable within less than $\pm 5^\circ$ at the core region in combination with the rest of the limitations of the base claim in combination with the rest of the limitations of the base

claim. The repeatability is defined as resolution for cutting the glass around the core region in which Kinoshita does not teach.

Claim Rejections –

35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

and –

35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kinoshita et al. (JP354030590A).

Regarding claims 6 and 10, Kinoshita teaches a process for cutting at least one optical fiber (shown at least in figures 6 and 7, see abstract), the process comprising the steps of: introducing a glass fiber 6 into a holding and positioning device 27; actuating a laser device 20 to deliver a beam having a power suitable for sublimating glass (see fig. 6, item 20 and abstract; see also translation: page 6, last parag.-page 7, 1st parag.); and effecting the relative movement of said beam across said glass fiber 6 along a path (see translation page 9, 1st parag.), thereby sublimating glass and cutting said glass fiber along said path (see translation page 9, 1st parag. and page 6, last parag.-page 7, 1st parag.), said path having at least one predetermined angle 90° greater than about 15° (see abstract and see also page 11, 1st parag.; wherein perpendicular angle is a 90°); and effecting the relative movement of said beam across said glass fiber 6 along a curved path (see at least fig. 6, item curved path of the fiber 6; also translation, page 11, 1st parag.).

- The statements advanced in claims 6 and 10, above, as to the applicability and disclosure of Kinoshita et al. are incorporated herein as follows:

5. Claims 7, 12, 19-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al.

Regarding claim 7, Kinoshita teaches, as stated above, all limitations of claim 6.

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However, Kinoshita does not specifically teach wherein said predetermined angle is about 45°. Nevertheless, Kinoshita states that the cutting fiber in an angle is implemented by easily controlling laser CO₂ output, three-dimensionally, on the fiber in order to obtain extremely reproducible fiber (see transl., at least page 8, 2nd parag. and page 12, 2nd parag.). Thus it would have been obvious to a person of ordinary skill in the art when the invention was made to adjust the angle of cutting fiber to a particular angle--such as by adjusting varying the angle of laser with respect to mirror 3, or the angle of mirror with respect to laser source 1—in order to obtain an optical fiber end having a particular angle such as about 45°, since such range would result in obtaining an extremely high reproductive and clean end fiber having improved smoothness (see transl., at least page 12, 2nd parag.); and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 12, Kinoshita teaches a process for cutting at least one optical fiber (shown at least in figures 6 and 7, see abstract), the process comprising the steps of: introducing a glass fiber 6 into a holding and positioning device 27; actuating a laser device 20 to deliver a beam having a power suitable for sublimating glass (see fig. 6, item 20 and abstract); and effecting the relative movement of said beam across said glass fiber 6 along a path having a predetermined angle 90° (see analogous teaching for rejection of above claims), thereby sublimating glass 6 and

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cutting said glass fiber 6 along said path (see analogous teaching for rejection of above claims).

However, Kinoshita does not specifically wherein said predetermined angle being within about $\pm 10 \mu\text{m}$ of a reference surface along the optical axis of said glass fiber.

Nevertheless, Kinshita's fiber cutter includes a fine controller 29 that controls the relative movement the optical fiber 6 along its optical axis in vertical direction with respect to the surface of substrate 4 from 0° shown in at least figures 4 and 6 (see at least page 450, 1st col., 2nd parag.+). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to adjust the path of the fiber 6 along its optical axis with reference to the substrate 4 such the predetermined angle 90° would be within about $\pm 10 \mu\text{m}$ of the surface of the substrate 4, since such range would result in obtaining a an extremely high reproductive and clean end fiber (see page 450, 1st col., 2nd parag.+); and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 19, 20-21 and 24, Kinoshita teaches a fiber 6 obtained by introducing a glass fiber 6 into a holding and positioning device 27; actuating a laser device 20 to deliver a beam having a power suitable for sublimating glass (see fig. 6, item 20 and abstract); and effecting the relative movement of said beam across said glass fiber 6 along a path having a predetermined angle 90° (see page 450, 2nd col., 2nd parag.+), thereby sublimating glass 6 and cutting said glass fiber 6 along said path (see page

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450, 1st col., 2nd parag.+), wherein said fiber 6, is integrated with an optical package and positioned within said optical package in a v-groove 30 (shown in fig. 6-7, item 6 in an integrated optical package) and comprises an end face (shown at least in fig. 1, item 6) and.

However, Kinshita does not specifically teach wherein the above fiber comprises an end face at least a portion of which is angled/rounded at more than about 15°/45° from perpendicular of its optical axis. Although the limitation of claim 20, an end face, is not referred/connected to as having an antecedence basis to claim 19 (i.e, said an end face), nevertheless, Kinoshita states that the cutting fiber in an angle is implemented by easily controlling laser CO₂ output on the fiber in order to obtain extremely reproducible fiber. Although it can be argued that the end face of a fiber is inherently rounded, nonetheless, it would have been obvious to a person of ordinary skill in the art when the invention was made, either to use a conventional fiber which has already an end face that is angled or rounded before cutting operation, or to adjust the angel of cutting fiber to a particular angle--such as by adjusting varying the angle of laser with respect to mirror 3, or the angle of mirror with respect to laser source 1—in order to obtain an optical fiber end having a particular angle such as about 15°/45°, since such range would result in obtaining a an extremely high reproductive and clean end fiber with improved smoothness (see page 450, 1st col., 2nd parag.+); and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 25, Kinshita further teaches wherein said relative movement of said fiber to said laser beam is effected in one of two ways, a first way in which the fiber moves and the laser beam remains stationary, and a second way in which the laser beam moves and the fiber remains stationary (see page 449, 2nd col., 1st–3rd parag.; also see page 450, 1st col., 3rd–4th parag.).

Response to Arguments and Amendment

6. Applicant's argument filed on 6/1/04 have been fully considered and thus the examiner has allowed claim 11, however, the arguments of applicant with respect to lack of teachings off Kinoshita with respect to claimed invention are not persuasive. With respect to applicant's argument, page 10, 1st parag.) that Kinoshita does not teach shaping of the end face of the fiber by cutting. The examiner responds that once a fiber is cut it has an end face with a shape, but if the applicant meaning of the end fiber being shaping by the laser through melting or by rounding the cut-end of the fiber then this limitation should be specified in the claimed invention. With regard to applicants arguments (page 10, 3rd parag.) with respect to relevance of Kinoshita's teachings to the claimed invention, the examiner is supplying an official translation of the reference that clearly teaches all limitations of the above rejected claims.

Citation of Relevant Prior Art

7. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Takahashi et al. 6724959 teaches an angled face fiber

Nitta et al. 5521754 teaches using a rounded face fiber

Nitta 5471335 teaches using a rounded face fiber

Official translation copy of Kinoshita et al. (JP354030590A), March 2004.

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

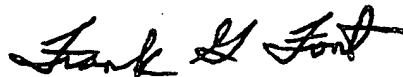
or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni
Patent Examiner
Group Art Unit 2883

Frank Font
Supervisory Patent Examiner
Group Art Unit 2883

February 23, 2004

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